

Biomass-Derived Fuels Reporting and Verification Guidance

This document identifies requirements for reporting and verifying biomass-derived fuels (biomass fuels) pursuant to the Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (MRR) for 2013 data reported in 2014, and for data reported in future years. In addition to providing general reporting and verification guidance for operators combusting biomass-derived fuels, this document contains more detailed guidance for operators that combust woody-biomass materials, as well as operators and suppliers that report exempt biomethane. Many of the requirements relevant to biomass-derived fuels can be found in sections 95103(j) and 95131(i) of MRR, and sections 95852(i), 95852.1, 95852.1.1, and 95852.2 of the Cap-and-Trade Regulation.

This guidance document does not, and cannot, create or vary any legal requirements of MRR.

1. Reporting Biomass Fuels

Biomass fuels are fuels that are derived from biomass products and byproducts, wastes, and residues from plants, animals, and microorganisms. Under the greenhouse gas (GHG) emissions accounting framework established by MRR and the Cap-and-Trade Regulation, CO₂ emissions from the combustion of biomass fuels that meet specified criteria in the regulations are considered biogenic fuels and are exempt from a compliance obligation under the Cap-and-Trade Regulation. Pursuant to section 95103(j) of MRR, operators and suppliers must separately report and identify biomass fuels combusted or supplied using the criteria for exempt and non-exempt fuels in section 95852.2(a) of the Cap-and-Trade Regulation. Generally, operators and suppliers enter fuel type information for each combustion unit by using the drop down fuel menu in the California Electronic Greenhouse Gas Reporting Tool (Cal e-GGRT).

1.1. Exempt Biomass Fuels

CO₂ emissions resulting from the combustion of biomass fuels are “exempt” from a compliance obligation under the Cap-and-Trade Program if they meet certain requirements in MRR and the Cap-and-Trade Regulation. If an operator or supplier is able to successfully verify biogenic emissions from biomass fuels that meet the exemption requirements, they are not required to surrender compliance instruments for the verified exempt biogenic emissions.

Specifically, for reporting purposes, exempt fuels are those biomass derived fuels, including biomethane and biogas, that meet the eligibility requirements listed in section 95852.1.1 of the Cap-and-Trade Regulation, and that are listed as fuels without a compliance obligation under section 95852.2(a) of the Cap-and-Trade Regulation. Although the biomass derived fuels that meet the criteria in these two sections are exempt from a compliance obligation, the emissions associated with the fuels still count towards the reporting thresholds in MRR that determine applicability and verification requirements, and must be reported as exempt biomass fuels when reporting emissions in Cal e-GGRT.

For reporting entities subject to verification, all reported emissions from exempt biomass fuels must meet the verification requirements pursuant to section 95131(i) of MRR. During verification, verifiers must confirm that the operator or supplier can document and demonstrate that the biomass fuels reported as exempt meet the all applicable requirements of the Cap-and-Trade Regulation and MRR, and are therefore reported correctly as exempt.

1.2. Non-Exempt Biomass Fuels

Non-exempt biomass fuels are fuels for which the CO₂ emissions resulting from the combustion of the fuel *are subject* to a compliance obligation under the Cap-and-Trade Regulation. Specifically, non-exempt biomass fuels are those which do not meet the eligibility requirements of section 95852.1.1 of the Cap-and-Trade Regulation, or are not listed in section 95852.2(a) of the Cap-and-Trade Regulation, or cannot be verified as exempt biomass fuels pursuant to section 95103(j) of MRR. During the verification process, biomass fuel emissions that are reported as “exempt” by the operator or supplier must be re-classified as “non-exempt” in the emissions data report if the verifier determines that the fuels do not meet the full requirements for exemption. If the operator or supplier fails to correctly identify non-exempt biomass fuels as non-exempt, it would result in an adverse emissions verification statement.

2. Measurement and Calculation Requirements for Exempt Biomass Fuels

Pursuant to section 95103(k) of MRR, meters and measurement methods used to measure exempt biomass fuels are exempt from the fuel meter accuracy requirements in sections 95103(k)(1) through (k)(11). Pursuant to section 95115(c)(1), exempt emissions for biomass fuels that are not mixed with fossil fuels prior to combustion or oxidation, or which are measured separately from fossil fuels, may be calculated using any calculation (or “tier” under subpart C of the United States Environmental Protection Agency (USEPA) Mandatory GHG Reporting Rule 40 CFR Part 98.33(a)) available, including tier 1, which uses default high heating value or carbon content for the reported fuel.

Unlike emissions that qualify as exempt, any non-exempt biomass fuel emissions must meet all the same requirements for meter accuracy and calculation methodologies as emissions reported from fossil fuels. Specifically, operators must use accurate measuring devices that meet requirements in section 95103(k), and use the calculation methods prescribed in sections 95112 and 95115 of MRR for fossil fuels.

It is important to note that emissions from exempt biomass fuels must meet the same requirements for meter accuracy and calculation methodologies as non-exempt fuels, if the calculation of the exempt biomass fuel emissions directly affects the calculation of non-exempt emissions. As an example, if biogas and natural gas streams are combined prior to combustion in a boiler, and the natural gas stream is not measured before the fuels are combined the emissions from the combined fuel stream must be calculated using a tier 3 or 4 methodology, and the metering devices must meet the accuracy requirements of section 95103(k) of MRR. Pursuant to section 95115(e) of

MRR, the biomass emissions must be calculated based on contractual deliveries of biomethane, with the remainder of emissions coming from the natural gas.

3. Categorizing Woody Biomass Fuels

Reporting entities are required to appropriately categorize woody biomass fuels as agricultural, urban, or forest-derived wood waste when reporting combustion emissions from woody-biomass fuels in Cal e-GGRT. It is important to correctly categorize the woody biomass fuels using the drop-down menu choices in Cal e-GGRT because section 95103(j)(2) of MRR includes additional reporting requirements for forest-derived wood waste for it to be considered as exempt fuel. The categorization of different types of woody biomass as urban, agricultural, or forest-derived wood waste can depend on a number of factors. Some examples of the appropriate categorization of different sources of woody biomass can be found in Table 1:

Table 1: Characterization of Woody Biomass Material for Reporting

Woody Biomass Material	Appropriate Category
Wood from the pruning or removal of orchards	Agricultural Waste
Manufacturing and construction waste	Urban Waste
Wood from tree pruning or tree removal as a part of urban tree care	Urban Waste
Waste materials associated with the production of wood products (lumber, plywood, etc.)	Urban Waste
Wood from tree removal associated with land clearing for the purposes of approved construction, right of ways, etc.	Forest-Derived Waste (Requires verification of additional criteria to determine if fuel is exempt)
Wood from forest “thinning” for the purposes for forest fire risk reduction or improved health of the forest	Forest-Derived Waste (Requires verification of additional criteria to determine if fuel is exempt)

3.1. Reporting Urban and Agricultural Wood Waste

Reporters should not include deliveries of urban and/or agricultural wood wastes in the “Forest Product Reporting Form” that is uploaded to Cal e-GGRT. Reporters should report mill residues (e.g. sawdust, limbs, tree tops etc.) as urban waste rather than forest-derived wood waste, and reporters should not include deliveries of mill residues in the “Forest Product Reporting Form.” Additionally, if a fuel delivery contains both agricultural and urban wood waste and the amounts of each are unknown, a reasonable estimate may be made for the quantities of each, as long as non-exempt fuels are not included in the mixture. The approach used to arrive at the estimate should be documented in the GHG monitoring plan.

3.2. Reporting Forest-Derived Biomass

Only woody biomass materials that come directly from a forest and are primarily intended to be combusted (i.e., not by-products of milling processes, etc.) are categorized as forest-derived wood and wood wastes. Section 95852.2(a)(4) of the Cap-and-Trade Regulation requires exempt biomass fuel classified as wood and wood wastes to be harvested pursuant to an approved timber management plan (TMP) prepared in accordance with the Z'berg-Nejedly Forest Practice Act of 1973 or other local or nationally approved plans, and must be harvested for the purpose of forest fuel reduction or stand improvement.

Pursuant to section 95103(j) of MRR, an operator combusting forest-derived wood waste must list the contact information for the forest manager under whose purview the wood was removed, and report the California Forest Practice Rules (CFPR) or National Environmental Policy Act (NEPA) identifiers under which the wood waste was harvested, as applicable. To meet this requirement, the reporter must fill out and upload the "Forest Product Reporting Form" to Cal e-GGRT when reporting forest-derived fuels. Pursuant to section 95131(i) of MRR, the verifier must confirm that the facility did indeed receive the reported amounts of biomass fuels from the reported companies that provided the fuels, and that the reported companies followed the appropriate rules for forest wood harvesting. Verifiers will use a sampling approach to confirm this information.

There are a number of types of harvesting practices that meet California Forest Practice Rules and/or other local or nationally approved plans, and would therefore meet the requirements of MRR. The following are examples of harvesting practices that would meet MRR requirements:

- Wood harvested pursuant to a California Department of Forestry and Fire Protection (CalFire) approved Timber Harvest Plan (THP).
 - **Note:** Most of the timber that is harvested under a THP would be for the purposes of milling. Any combusted residues from the milling process (e.g. sawdust, limbs, tree tops etc.) are considered urban waste and should be categorized as such. Materials fitting the urban waste classification do not require CFPR or NEPA identifiers.
- Wood harvested under a THP exemption that was issued by CalFire.
 - **Note:** During verification, the reporting entity should be prepared to provide evidence to the verification team that the exemption was in effect during the harvest.
- Harvests performed under a non-industrial TMP.

If there are any other permits or arrangements that the operator believes meet the requirements of section 95103(j)(2) of MRR, they should contact ARB staff to determine whether the permit or arrangement could be used to meet MRR requirements.

4. Requirements for Reporting Biomethane

Biomethane is defined in MRR as “biogas that meets pipeline quality natural gas standards.” Biomethane is indistinguishable from natural gas when co-mingled with fossil natural gas and injected into natural gas transmission and distribution pipelines. MRR establishes additional criteria for claiming the emissions from biomethane as exempt because the site of production of the fuel may be a long distance from the reporting entity and there is no way for a verifier to identify the actual fuel combusted by the operator (i.e. the purchaser and end-user of the biomethane). For biomethane to be considered exempt, reporting entities must report the information in section 95103(j)(3) of MRR for all biomethane purchases. Verifiers must follow the requirements of section 95131(i)(2)(D) of MRR to confirm that the biomethane meets all exemption requirements. Verifiers should treat biomethane as a high risk source with high potential for misreporting. As described in section 4.1, a facility must be able to show that it purchased eligible biomethane through contracts which meet the requirements of section 95852.1.1 of the Cap-and-Trade Regulation.

4.1. Biomethane Contracts Requirements

All contracts for purchasing biomethane (or biogas) must meet the criteria in section 95852.1.1 of the Cap-and-Trade Regulation for the emissions associated with the combustion of the biomethane to be considered exempt from a compliance obligation in the Cap-and-Trade Program. Section 95852.1.1(a) of the Cap-and-Trade Regulation requires that biomethane or biogas procured under contracts executed on or after January 1, 2012, must be “new” fuel associated with an increase in biogas production capacity or with recovery of fuel that was previously vented or destroyed without producing useful energy, or must be fuel that is purchased under a previously existing contract that was executed prior to January 1, 2012.

If biogas is directly delivered from a producer to an operator, the operator can use that contract to show purchase of eligible biomethane. If biomethane is not directly delivered to an operator, the operator may establish the purchase of eligible biomethane through a chain of contractual arrangements, to claim it as exempt. For example, the producer of the biomethane may have a contract for purchase of the biomethane with a marketer, and the marketer may then have a contract for purchase of the biomethane with the operator. The operator must clearly demonstrate through contracts and supporting documentation that the purchased biomethane meets the requirements of section 95852.1.1 of the Cap-and-Trade Regulation, as well as document the disposition and sales or any carbon credits or allowances to ensure that the requirements in section 95852.1.1(b) of the Cap-and-Trade Regulation are met.

Some biomethane purchase contracts may include provisions to purchase supplemental fossil gas when contractual volumes of biomethane cannot be provided due to transmission losses during transportation. MRR does not provide a minimum requirement for the amount of supplemental fossil gas that may be included in a biomethane purchase contract; however, ARB recommends that the volume of fossil gas should be less than 5 percent of the total purchased amount, and any supplemental fossil gas should be documented through meter and invoice data. If the amount of

supplemental fossil gas exceeds 5 percent of the total volume of biomethane, the operator should contact ARB.

4.2. Biomethane Transportation, Displacement, and Gas Swapping

Biomethane nominated to a pipeline is identical to fossil-derived natural gas; therefore, the actual molecules of biomethane may not be combusted by the operator with a purchase contract. Pursuant to section 95131(i)(2)(D) of MRR, the operator, or reporting entity, must provide evidence to the verifier that they are “receiving” the biomethane that they purchased, whether or not the operator receives the actual biomethane molecules via an interconnected pipeline with a physical delivery pathway.

The operator, or reporting entity, could employ one of two methods to provide evidence that the operator is “receiving” the biomethane. The first is to show that the biomethane was transported to, or near the facility, where the fuel was combusted. This would include nomination and allocation reports, as applicable, showing the fuel moving along pipelines towards the source of combustion. In cases where pipelines physically connect the source of the biomethane to the operator’s facility, but the flow of the gas is in the wrong direction, the natural gas could be moved via “displacement,” but the path to the facility would be tracked by contracts with pipeline companies.

The second method is for the operator, or reporting entity, to provide evidence that the owner or marketer of the biomethane engaged in a “swap” of the biomethane at the source with natural gas delivered to the operator, or reported entity. This would still require evidence that the biomethane was nominated to a pipeline, but would not require evidence that the biomethane physically flowed to the operator’s facility in California.

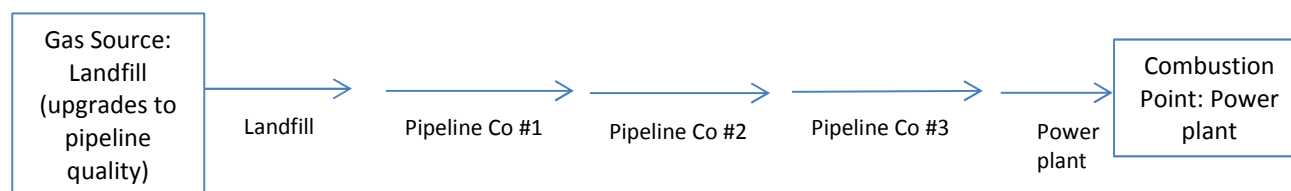
In either case, purchase invoices that detail the actual volume and heat content of biomethane procured during the year are the primary means of documenting the total amount of biomethane reported by the operator, or reporting entity. This step is especially important if the biomethane is “subtracted” from the total measured natural gas to calculate the total fossil natural gas combusted using the equation in section 95115(e)(3) of MRR. In this case the biomethane purchase invoice data is used to quantify the covered emissions from natural gas, making the calculation subject to material misstatement requirements.

The following examples illustrate the types of information that the operator, or reporting entity, could use to document the path of the biomethane purchased by the operator.

4.2.1. Example: Biomethane is Delivered to an Operator via Interconnected Pipelines

Figure 2 provides an example of an arrangement where biomethane is transferred from a landfill to an operator, or reporting entity, via interconnected pipelines. For this example, the applicable biomethane contract requirements from section 95852.1.1 are considered to be met.

Figure 2: Delivery via Interconnected Pipelines

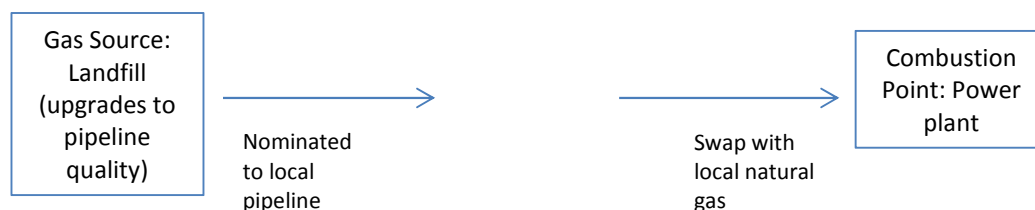


In the example in Figure 2, biogas is produced at a landfill that then upgrades the gas to pipeline quality. The landfill has a contract in place to sell the fuel to a marketer who handles the pipeline nominations necessary to transfer the gas from the landfill to the operator, or reporting entity, through physical interconnected pipelines between the landfill and the operator. The biomethane is then sold at the power plant's fence line from the marketer to the operator, or reporting entity. The operator reports the biomethane as 'exempt' biomass-derived fuel and during verification the operator must provide the GHG Monitoring Plan to the verifier, which includes information about the procurement of biomethane, including information on contracts in place.

4.2.2. Example: Biomethane is Sold to an Operator With No Physical Pathway Through Interconnected Pipelines

Figure 3 provides an example of an arrangement where biomethane is transferred from a landfill to an operator, or reporting entity, where there is no physical pathway through interconnected pipelines. Similarly, in this example, biogas is produced at a landfill, which upgrades the gas to pipeline quality. A contract is in place for the facility to purchase the biomethane from the producer. In this case, the operator would supply the verifier with contracts documenting the terms of the sale from the landfill to a marketer or other purchasing entity, and from the marketer or other purchasing entity to the operator. The reporting entity must ensure that the eligibility requirements in section 95852.1.1(a) are met. The operator would provide nomination, scheduling, allocation, and similar gas reports to the verifier to show the purchasing path of the biomethane from the source to the operator. The operator would provide invoices to the verifier to confirm the amount of fuel purchased and combusted by the operator. .

Figure 3: Delivery via In-Kind Gas Swap



There may be confidentiality reasons why a fuel marketer or other entity supplying the fuel to the operator may not want to share documentation such as invoices, scheduling, transportation, balancing reports, or any other information referred to in section 95131(i)(1)(B)(2.) of MRR with the operator. Pursuant to section 95131(i)(1)(B)(2.)(a.),

in this case, the operator, or reporting entity, may arrange for the documentation to be supplied directly to the verifier by the supplier of the fuel.

4.3. Mandatory Reporting and Renewable Portfolio Standard Eligibility Criteria

The reporting and verification of GHG emissions under MRR are separate from California Energy Commission requirements for publicly-owned utilities to establish eligibility and earn credit towards renewable portfolio standard (RPS) for combustion of biomethane. However, the contracting and annual accounting requirements are similar. Reporting entities whose biomethane is RPS-eligible can likely provide verifiers with information similar to that which they provided to the California Energy Commission associated with the annual accounting of generation attributable to biomethane.